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PUCCINIA PSIDII ON ALLSPICE AND RELATED PLANTS

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Allspice, also known as pimento, is the dried unripe berry of Pimenta dioica (L.) Merr., which grows in the West Indies and Central America, but is most common in Jamaica (7). Allspice is used as an evergreen ornamental in South Florida (4).

In early 1977, the rust Puccinia psidii Wint., known commonly as guava rust, was discovered on an allspice tree southeast of Miami, in Dade County. It has since been found on allspice in Broward, Collier, Hillsborough, Lee, Martin, Palm Beach, and Pinellas counties. These records from Florida represent the first reports of guava rust on the North American continent. Previously, guava rust had been restricted to Central and South America, and the Caribbean (1).

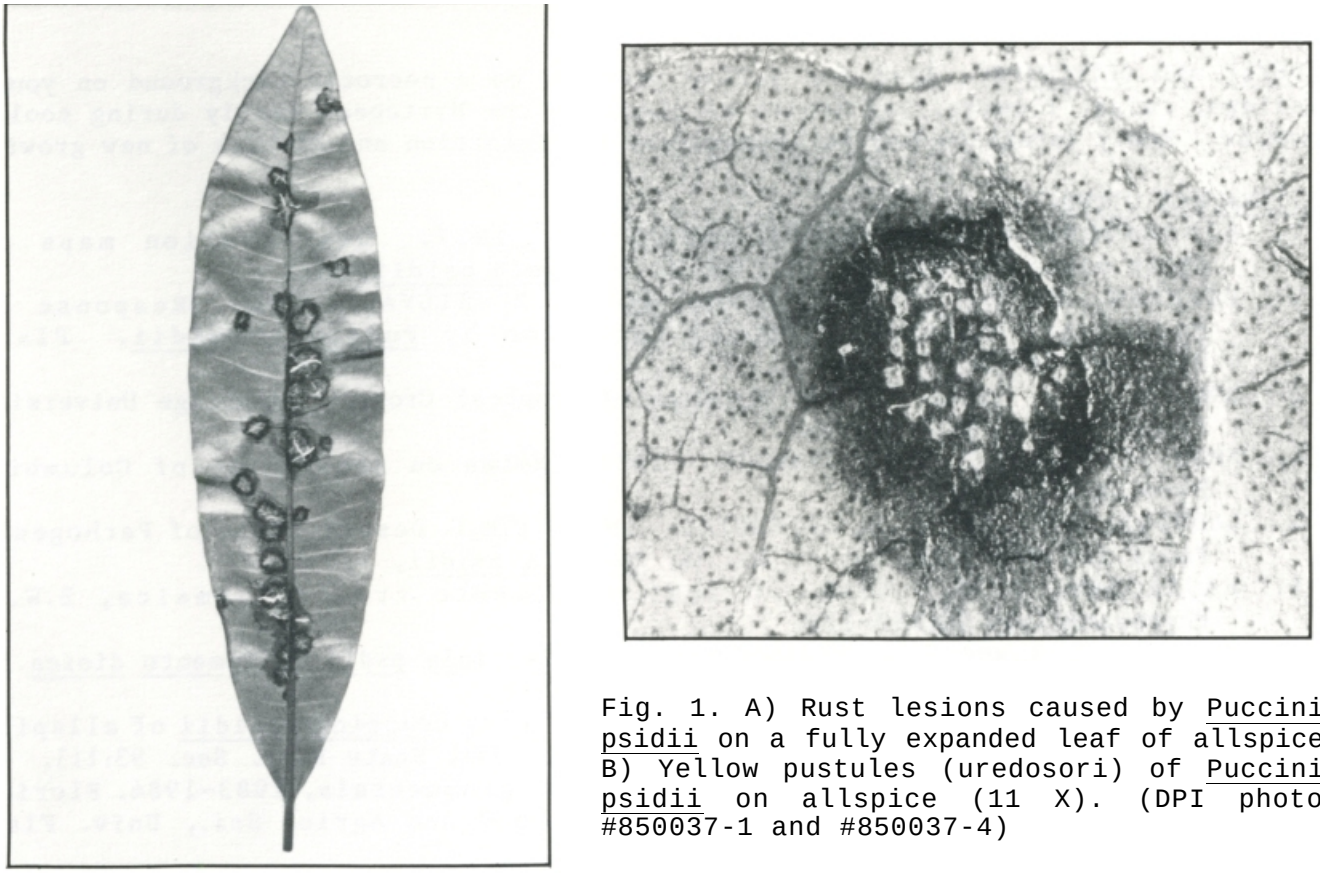

Fig. 1. A) Rust lesions caused by Puccinia psidii on a fully expanded leaf of allspice. B) Yellow pustules (uredosori) of Puccinia psidii on allspice (11 X). (DPI photos #850037-1 and #850037-4)

The host range of guava rust includes many plants in the family Myrtaceae, [Psidium guajava L., several species of Pimenta, Myrcia, Myrciaria, Callistemon, Spondias, Marlierea, Campomansia, Eugenia, and many species of Eucalyptus (1,2,3,5,6,7)1. Good evidence of host specialization exists within Puccinia psidii; therefore, isolates from one host genus may or may not infect other genera in the Myrtaceae (3). The first records of guava rust occurring on allspice came from Jamaica in 1934, and within two years, oil distilleries were closed due to extensive damage to the allspice crop there (5).

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SYMPTOMS AND DISEASE DEVELOPMENT: Guava rust infects the foliage, inflorescences, and young twigs of allspice and eucalyptus, and foliage and fruit of guava (5). Infected tissues can become distorted and covered with bright yellow pustules (uredosori) of the pathogen. Extensive defoliation, flower blight, fruit infection and twig dieback are possible with heavy infections. On fully expanded leaves, dark-bordered, roughly circular brown lesions with yellow haloes develop (Fig. 1), and yellow uredosori form on both upper and lower leaf surfaces during damp weather (Fig. 2). Leaves over 40 days old are very resistant to infection (3). Temperatures of 55-77°F and high humidity favor infection (3,5). Uredospores are disseminated by rainsplash (5). In Florida, the disease occurs commonly on flushes of new growth of allspice during late winter and early spring. Only uredial and telial stages are reported; no alternate hosts are known. Teliospores of the pathogen develop in the uredosori but have not been reported in Florida.

CONTROL: No measures for controlling Puccinia psidii in Florida have been investigated. The disease declines as temperatures rise above 77°F, so pruning and sanitation during the warm dormant season for the rust may be very effective in controlling the disease. Copper oleate is EPA-registered for use on ornamental and shade trees for rust control (9).

SURVEY AND DETECTION: Look for yellow pustules on a necrotic background on young foliage, twigs, flowers, and fruits of plants in the Myrtaceae family during cooler months. Heavy infection may be accompanied by distortion and dieback of new growth.

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